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# MONTHLY REPORT

ON

# THE PROGRESS OF THERAPEUTICS.

*Edited for the Edinburgh Medical Journal.*

No. XXII.—August 1876.

BY

W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P.E.,

*Licentiate of the Royal College of Surgeons of Edinburgh ; Lecturer on Medical Chemistry  
in the Ledwich School of Medicine, Dublin ; Corresponding Member of the Therapeutical  
Society of Paris ; Hon. Member of the Ontario and Chicago Colleges of Pharmacy, etc. ;  
Librarian to the Royal College of Surgeons in Ireland.*

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## REPORT ON THE PROGRESS OF THERAPEUTICS.

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CHLORAL.—(a.) *In Pityriasis Capitis*.—In a paper read before the Société de Thérapeutique of Paris, Dr Martineau recommends the treatment of pityriasis capitis by chloral lotions. He uses a solution of 25 grammes of chloral in 500 of water; this should be made lukewarm and applied every morning with a sponge. The rash and the pruritus rapidly disappear under the influence of the application. The immediate effects are redness of the skin and slight itching, but these inconveniences last only a few minutes.

(b.) *In Pruritus of the Vulva*.—Dr Gellé employs in this affection a solution of one part of chloral in ten of water as a lotion. Under this treatment the itching is lessened, and at the end of a fortnight is altogether subdued.—*Tribune Med.*, Dec. 1875.

(c.) *In Dysentery*.—Dr David Punice recommends as an abortive of dysentery chloral hydrate in a dose large enough to produce sleep (30 grains), in conjunction with one or two ounces of sulphate of magnesia. Its effect may be aided by subcutaneous injection of morphia.—*St Louis Med. and Sur. Jl.*, No. 9, 1876.

(d.) *In Pains of Childbirth*.—In M. Polaillon's opinion chloral may be employed with advantage for assuaging excessive uterine excitability, or for the relief of pain produced by too violent contraction; but it ought not to be employed in normal accouchements.—*Union Médicale*, 15th April.

(e.) *In Tetanus*.—In the *Lancet* for 15th April, Dr Leonard Cane records a case of tetanus which was successfully treated by 20-grain doses of chloral, frequently repeated.

(f.) *In Chorea*.—MM. Goeltz and Auger record a case of chorea which was successfully treated by enemata of chloral after all other



remedies had failed. Two injections daily of a drachm each of chloral were administered for fifteen days, by which time the movements had completely ceased.—*Gaz. Hebd.*, No. 50, 1875.

(g.) *Enemata of Chloral in Infantile Convulsions*.—M. Polaillon in two cases gave an enema of 3 grains of chloral in 5 drachms of water. Sleep and cessation of convulsions followed, and a repetition of the enema twenty-four hours later completed the cure.—*L'Union Médicale*, 23d March.

(h.) *Chloral Suppositories*.—The following is Mr H. Mayet's formula:—℞ Ol. theobromæ, gr. xxv.; cetacei, pulv. chloral, āā gr. xlv. For one suppository.—*Amer. Druggists' Cir.*, Dec. 1875.

Chloral acts almost as energetically when introduced into the rectum as when given by the mouth.

(i.) *Intravenous injection of Chloral for the production of Anæsthesia*.—In a recently published work MM. Deneffe and Van Wetter detail their experience of this mode of producing anæsthesia. They recommend a solution of 10 grammes of chloral in 30 grammes of distilled water. If acid, this solution should be carefully neutralized by a few drops of solution of carbonate of soda. The authors give an ample description of the apparatus employed, and of the mode of procedure adopted. They claim the following advantages for this mode of producing anæsthesia:—1. Absence of any preliminary stage of excitement. 2. Absence of nausea and vomiting. 3. Accurate graduation of the dose administered. 4. Absolute character of the anæsthesia and muscular relaxation produced. 5. Prolonged blunting of the patient's sensibility, which protects him from the influence of shock. Among the hypothetical disadvantages of the system may be enumerated,—risk of thrombosis and embolism, difficulty of producing insensibility, danger of prolonged stupor, inflammation of the wounded vein. The *observed* disadvantages are,—transient dyspnœa, occasional irregularity of the heart's action, presence of a small quantity of blood and albumen in the first urine passed after the injection, and risk of fatal syncope. MM. Deneffe and Van Wetter look forward to the time when intravenous injection of chloral will supplant all other modes of producing anæsthesia.

**BUTYL-CHLORAL**.—Liebreich states that the substance commonly known as croton-chloral is, in fact, butyl-chloral, and contains two more atoms of hydrogen than was supposed. He finds that its physiological effects are constant, and that the anæsthesia which it induces commences at the head, and spreads thence over the body. With a fatal dose, the respiration ceases before the pulse. In chloral poisoning, paralysis of the heart is caused, both ventricles being found full of blood; while in poisoning from butyl-chloral, the left ventricle is contracted and nearly empty, the right cavities and lungs being charged with blood. In chloral poisoning, artificial respiration is useless, and the heart's action can only be



restored by the action of strychnia on the cardiac ganglia. In poisoning by butyl-chloral, artificial respiration can re-excite the heart's action. Chloral kills by its action on the cardiac ganglia, butyl-chloral by its action on the respiratory centre. The duration of the narcosis produced by butyl-chloral is nearly two-thirds less than that produced by chloral. Liebreich believes that butyl-chloral may prove useful as an anæsthetic in operations about the head. Its practical value lies in its property of diminishing sensibility before inducing narcosis. In two cases of severe tic, fifteen grains of butyl-chloral produced complete relief, lasting for two hours each time the dose was repeated. The following formula is recommended by Liebreich:—Butyl-chloral 5 to 10 parts, glycerine 20 parts, water 130 parts. To avoid the production of hypnotism, and to obtain anæsthesia merely, the administration should be commenced in small doses. To produce sleep, from 15 to 45 grains, according to circumstances, will be needed. Butyl-chloral should be taken after meals, and should be followed by a copious draught of water.—*Deutsche Medicinische Wochenschrift*.

Dr N. Jerusalimsky finds that croton-chloral hydrate diminishes the pressure of the blood, whether the cerebral centres be injured or not; it therefore exerts a paralyzing action on the heart. Small doses retard the respiratory activity, larger doses arrest it. From experimental evidence, it is concluded that it exerts no specific influence on the fifth or any other sensory nerve.—*Mosk. Med. Zeitung*, No. 17, 1875.

IODIDE OF STARCH.—Bellini suggests the employment of iodide of starch as a medicinal agent. He states that it forms with some poisons, as with strychnia, insoluble compounds; and with others, as with alkalies and alkaline sulphurets, it forms compounds which, though soluble, are not deleterious.—*L'Imparziale*, No. 7, 1875.

QUININE.—(a.) *Action of*.—Dr Vincenzo Chirone concludes from his experiments that the primary effect of quinine is to produce temporary exaltation of the functions of the respiratory apparatus, and that this state is followed by depression. At first it augments the force and frequency of the heart's action, and the rapidity of the blood-current, and it slightly increases the arterial tension; it next diminishes the force of the systolic impulse, and causes an increase in the venous tension in relation to the arterial. He believes the muscular fibre of organic life to be the *seat* of the action of quinine, and excitation of muscular extensibility to be the *nature* of its action.—*Lo Sperimentale*, Fas. 11, 1875.

(b.) *As a Febrifuge*.—The *Practitioner* for June contains an interesting article on this subject from the pen of Professor Binz. He holds that quinine does not diminish reflex excitability in the nervous system, and that the improved condition in a fever patient after a good dose of quinine is to be attributed, not to the



neurotonic action of the drug, but to a decrease in the oxidation and disintegration of the elements of the body as shown by the decrease in the excretion of urea.

Quinine possesses advantages over all other antiseptics and antizymotics. It can be given in large doses; it remains in the circulation for many hours; it does not enter into combinations or undergo decomposition within the organism, so as to become a thing chemically indifferent with respect to the ferments upon which it is desired to have it act.

The spleen is the chief source of the formation of uric acid, and quinine lessens the production of this acid very strikingly. This may be explained by the fact that the spleen contains an immense number of white cells, for which quinine is a highly efficacious poison. They are the seat of energetic oxidation, and this oxidation is lowered by quinine. In febrile processes the spleen becomes swollen, in consequence of the irritation it receives from the pyretic substances that circulate in the blood; but the activity of these substances being diminished by quinine, a diminution in the splenic enlargement is the result. The decline of temperature in fever, so generally induced by quinine, takes place independently of any connexion with the performance of the heart's action.

With regard to the treatment of sunstroke by hypodermic injection of quinine, Binz argues that the essential cause of this affection is overheating of blood and tissues, and therefore decomposition of the nutritive material. The blood acts as a poison to the heart and nervous system. Quinine, under such circumstances, acts as a direct antipyretic, as it does in malarial fever. That quinine acts directly on protoplasms, without any agency of the nerves being involved, numerous instances prove, and Binz brings forward experimental evidence in proof of this fact.

The well-marked action exerted by quinine in solution upon many septic ferments on the one hand, and its indifference towards the protoplasm of *Penicillium glaucum* on the other, may serve for an instance of the puzzling inequality of effects produced by this drug upon the fever-producing ferments within the body. Thus, quinine is an efficient remedy in ague, while it fails entirely in relapsing fever, and it acts with decided antipyretic power in typhus abdominalis, while it seems useless in typhus exanthematicus, and so on. Dr Binz concludes an interesting paper by some remarks on the application of quinine in fever. He says it should be given in large doses, in a digestible form—that is to say, with some acid—and during the time when the fever tends to decrease. He enumerates the tests for the purity of quinine.

(c.) *Hypodermic Injection of Quinine.*—In a case of uterine congestion associated with quotidian intermittent, in which there was intense neuralgic pain in the right groin, M. Rouxeaus administered a hypodermic injection of 15 centigrammes of sulphate of quinine and 1 centigramme of sulphate of morphia over the seat of



pain. The pain was at once relieved, and a repetition of the injection next day effected a cure.—*Journal de Méd. de l'Ouest*, June 1876.

Surgeon A. R. Hall says that the experience of several Indian medical officers is now apparently sufficient to prove that the hypodermic injection of quinine in heat-apoplexy is the most successful treatment hitherto adopted. He injects a solution of 5 grains of the sulphate in 5 minims of dilute sulphuric acid, and 50 minims of distilled water. Five cases so treated recovered.—*Practitioner*, March.

In the *Lancet* for 8th April, Surgeon-Major G. Y. Hunter writes relative to the subcutaneous injection of quinine in malarial fever. The following are his conclusions:—1. However well adapted this mode of treatment may be in selected cases—well fed and set up, and of naturally good constitution—it is inadmissible in the unhealthy class. 2. The method is not really economical, on account of the loss of labour and consequent diminished outturn. 3. Time is not gained, as, although the cure of fever is speedily effected, a week was lost subsequently, if ulceration occurred. 4. The operation is not painless, however carefully performed, and is not unattended with risk—one fatal case of tetanus is known to Dr Hunter, which appeared to be caused by it.

In the *Lancet* for 20th May, Dr H. P. Roberts records two cases of tetanus terminating fatally, following the hypodermic injection of quinine in malarial fever. He says that, from his experience of these cases, he has been obliged to abandon what has hitherto been with him a most ready and efficacious method of treating malarial poisoning.

Dr R. S. Dawson, writing to the *Lancet* for 8th July on the subject of the hypodermic administration of quinine, affirms that it is the undissolved crystals of quinine which cause the suppuration which frequently takes place. He has never had ulceration as a sequence to quinine injection,—a result which he attributes to the fact that he was careful always to use the quinine in a perfect state of solution.

Dr P. Jaillard (*Répertoire de Pharmacie*, N. S., vol. iii. p. 102) recommends for hypodermic injection the acid or neutral sulphovinate of quinine, especially the latter. This is very soluble in water and alcohol, but insoluble in ether. A solution of one part of the sulphovinate and two of distilled water keeps perfectly at the ordinary temperature. The author gives full directions for preparing the salt. For hypodermic use, one grain of sulphovinate of quinine may be dissolved by the aid of gentle heat in distilled water.

Mr Wellcome states that a solution of arabinatate of quinine (1 grain in 3 minims) has given satisfactory results as a hypodermic injection, not causing any unpleasant local effects.—*Amer. Journal of Pharmacy*, p. 187, 1876.



(d.) *Quinine in Pertussis*.—Dr Bruen affirms, that to be of use in pertussis quinine should be administered, in rapidly-increased doses, for a period not longer than five days, when it should be stopped, and recommenced after an interval, if necessary. To do good it must be pushed to a quantity equal to a full antiperiodic dose. To a child under three years, 10 grains should be given in twenty-four hours; to a child twelve years old, from 16 to 20 grains should be given in the same time.—*Phil. Med. Times*, 17th July 1875.

(e.) *Quinine in Hooping-Cough*.—In the *Lancet* for 8th April, Dr John Reynolds writes in high terms of the treatment of this affection by full doses of quinine. He states that it has never yet failed in a single instance, even in the severest cases, to give almost immediate relief, and in from twelve to twenty-four hours to absolutely cure the patient. In the *Lancet* for 29th April, Dr L. Popp, of Munich, draws attention to the fact that this mode of treatment was first suggested by Mr A. Steffen, in the *Jahrbücher für Kinderheilkunde*, 4 Jahrg. 2 Heft, p. 227, 1871.

(f.) *Quinine in Sore Throat, etc.*—Dr Brakenridge has treated many cases of scarlatinal, diphtheritic, and other forms of sore throat, with a gargle containing 2 grains of sulphate of quinine and 5 minims of dilute sulphuric acid to each ounce of water. In the early stages of cynanche tonsillaris it proved useless, but in other cases, chiefly in diphtheritic sore throat, it proved a most successful remedy.—*Practitioner*, August 1875.

(g.) *Quinine as an Ecboic*.—In the *Practitioner* for July 1876 is a paper by Mr J. H. Wathen, in which he records two cases which demonstrate very clearly the ecboic action of quinine.

(h.) *Quinine in Cramp*.—Dr Busenlechner, of Hernals, near Vienna, relates a case of severe idiopathic cramps, occurring in the upper extremities of a married woman aged 24, who was suckling an infant eight months old. After failure with chloral, morphia injections, and castoreum, he administered 5 grains of quinine, which gave relief for eight days. Tremors then began in the fingers, and he gave another dose of quinine. There was no relapse at the end of six weeks.—*Med.-Chir. Centralblatt*, No. 18, Jahrg. 10.

(i.) *Bromhydrate of Quinine*.—Loulez confirms the conclusions of Gubler as to the efficacy of bromhydrate of quinine in malarial fever. He has found it to succeed when the sulphate has failed. It does not produce the quinine intoxication caused by the latter salt. Owing to its solubility, it is preferable to the other salts of quinine for hypodermic injection.—*Gaz. Hebd.*, 18th Feb. 1876.


(j.) *Phenate and Salicylate of Quinine*.—M. Maury makes the former salt by adding pure phenol to an alcoholic solution of freshly-precipitated quinine. Its unstable character unfits it for medicinal use. The salicylate of quinine may be obtained either directly or by the action of sulphate of quinine or salicylate of



soda. This salt is not deliquescent, is soluble in hot and cold alcohol, but not in water, is decomposed by acids, and has a better taste. When taken internally it gives the urine an odour of meadow-sweet, and this secretion gives a violet colour with ferric salts. Salicylate of quinine has a marked power in checking and arresting fermentation.—*Lyon Médicale*, 18th and 25th July 1875.







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